



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:  
Alexandra D. Bermel, et al

INK JET RECORDING ELEMENT

Serial No. 09/770,782

Filed 26 January 2001

Group Art Unit: 1774

Examiner: Pamela R. Schwartz

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*Cheryl L. Betteridge*  
Cheryl L. Betteridge

*March 29, 2004*  
Date

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA. 22313-1450

Transmitted herewith is an amendment in the above-identified application:

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FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+ 290	\$0
					<b>TOTAL</b>	<b>\$0</b>

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☒ Any patent application processing fees under 37 CFR 1.17.

(For Extensions of Time and other Petitions to the Assistant Commissioner)

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Response under 37 C.F.R. 1.116  
- Expedited Examining Procedure -  
Examining Group 1774

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of

Inventor(s):

Alexandra D. Bermel, et al.

TITLE

INK JET RECORDING ELEMENT

Group Art Unit: 1774

Examiner: Pamela R. Schwartz

Telephone: 571-272-1528

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Cheryl L. Betteridge

NAME

SIGNATURE

DATE: March 29, 2004

Serial No.: 09/770,782

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Commissioner for Patents  
Alexandria, VA 22313-1450

**RESPONSE UNDER 37 C.F.R. 1.116**

Sir:

**REMARKS**

The Examiner's comments together with the cited references have been carefully studied. Favorable reconsideration in view of the following remarks and the attached Declaration is respectfully requested.

Claims 1-8 and 14 are pending in the application. Claims 9-13 have been canceled.

Claims 1-4, 6-8, and 14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kasahara et al. in view of any of Brown, Akiya et al., and Darsillo et al.

Claims 1 and 5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kasahara et al. in view of any of Brown, Akiya et al., and Darsillo et al. and further in view of Tokunaga et al. for reasons of record.

The rejections are respectfully traversed. The Examiner has stated:

....the showings in the specification do not demonstrate unexpected results based upon the quantity of crosslinking agent because the

examples fail to hold all but one variable constant. In addition to varying the quantity of crosslinking agent, applicants' examples use polyvinyl alcohol B while the comparative examples use polyvinyl alcohol D. Therefore, a direct comparison cannot be made.

In brief, the present invention is directed to an inkjet recording element comprising a support having a porous image-receiving layer comprising particles of fumed alumina, a poly(vinyl alcohol) binder and a crosslinking agent, the particles having a primary particle size of from about 7 to about 40 nm in diameter which may be aggregated up to about 300 nm, and the crosslinking agent being present in an amount of at least about 20 weight % of the poly(vinyl alcohol) binder. (The amount of the poly(vinyl alcohol) is limited by the fact that the image-receiving layer is porous. However, the absence of an upper limit is due to the fact that excess amounts of poly(vinyl alcohol) would not be detrimental.)

By use of the invention, a porous ink jet recording element is obtained that exhibits good overall appearance without cracking and has an excellent dry time and reduced ink coalescence. The results with respect to dry time are particularly significant and dramatic.

Applicants have previously submitted a Declaration under Rule 132 by one of the inventors which compares fumed alumina and fumed silica for dry time and gloss. It shows that fumed alumina is superior to fumed silica for both of these properties.

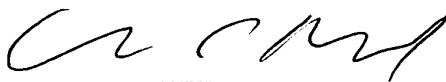
Applicants further submit a Declaration under Rule 132 by one of the inventors which show that the effect of the difference between PVA-B (GH23) and PVA-D (5222) does not affect dry time. As indicated in the Declaration, experiments performed, just as in Element 1 of the invention as described in the present application, except using PVA D resulted in a drytime of 10. Experiments performed, just as in Comparative Element C-2 as described in the present application, except using PVA B resulted in a drytime of 78. This shows that at a low level of hardener for the PVA used in the invention (PVA-B), the drytime was poor, and for a high level of hardener for the PVA used in the comparative examples (PVA D), the drytime was excellent. Thus, PVA type is not the cause of the improved drytime.

In view thereof, it follows that the subject matter of the claims would not have been obvious of Kasahara et al. in view of any of Brown, Akiya et al., Darsillo et al, or Tokunaga et al. at the time the invention was made.

Applicants have reviewed the prior art made of record, and believe that singly or in any suitable combination, they do not render Applicants' claimed invention unpatentable.

In view of the foregoing remarks and amendment, the claims are now believed allowable and such favorable action is courteously solicited.

Respectfully submitted,



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